

## Key to the Palaearctic species of the genus *Hercostomus* Loew (Diptera, Dolichopodidae) 3. Part <sup>1</sup>

O.O. Selivanova, O.P. Negrobov, N.A. Nechay, O.O. Maslova <sup>2</sup>

**Abstract:** Key to the Palaearctic species of the genus *Hercostomus* Loew (Diptera, Dolichopodidae) 3. Part. *Cesa News* 78: 1-6.

Key of species of the third part (femur yellow, postocellar bristles black) of the genus *Hercostomus* Loew is composed for Palaearctic Region. For the first time, 16 species are added in this key: *Hercostomus flaviventris* Smirnov et Negrobov, *Hercostomus nemorum* Smirnov et Negrobov, *Hercostomus beijingensis* Yang, *Hercostomus gansuensis* Yang, *Hercostomus wudangshanus* Yang, *Hercostomus xiaolongensis* Yang et Saigusa, *Hercostomus acutangulatus* Yang et Saigusa, *Hercostomus leptocercus* Stack., *Hercostomus klowdeni* Olejníček, *Hercostomus silvestris* Pollet, *Hercostomus blankaartensis* Pollet, *Hercostomus helveticus* Pollet, *Sybistroma setosa* Schiner, *Sybistroma nodicornis* Mg., *Ludovicius sinaiensis* Grichanov, *Ludovicius miricornis* Parent.

**Key words:** Dolichopodidae, *Hercostomus*, key, Palaearctic Region.

### Introduction

The previous keys of the genus *Hercostomus* Loew, 1857 were composed by T. Becker (1917) and A.A. Stackelberg (1934) for the Palaearctic Region, by O. Parent (1938) for France and Palaearctic Region, by O. P. Negrobov and A.A. Stackelberg (1969) for the European part of Russia, D'Assis Fonseca (1978) for Great Britain, M. Pollet (1990) for the Western Europe, M. Pollet and F. Rampazzi (2003) for the Switzerland, I.Ya. Grichanov (2006, 2007) for North Europe, Caucasus and East Mediterranean.

<sup>1</sup> Has been supported by grant number 11-04-01051-a from the Russian Fund for Basic Research.

<sup>2</sup> Biological-Soil Sciences Faculty, Voronezh State University, Universitetskaya pl. 1, Voronezh, 394006, Russia. E-mail: [negrobov@list.ru](mailto:negrobov@list.ru)

Key 1 part (antennae, postocellar bristles and femur yellow) of the genus *Hercostomus* was published in the article O.P. Negrobov, N.A. Nechay, O.O. Maslova (2008), key 4 part (postocellar bristles yellow, femur black), was published in the article O.P. Negrobov, N.A. Nechay (2009a), key part 5 (postocellar bristles black, femur black) was published in the article O.P. Negrobov, N.A. Nechay (2009b).

These keys include representatives of the subgenus *Gymnopternus* Loew, which occupies vague systematic position. Some scientists give status to the subgenus *Gymnopternus* Loew as the genus (Aldrich, 1896; Corpus, 1989; Curran, 1933; Foote et al., 1965; Robinson, 1970; Yang, 2005). Some specialists of the fauna of the Palaearctic region unite these genera in *Hercostomus* Loew (Becker, 1917; Stackelberg, 1930; Parent, 1938; D'Assis-Fonseca, 1978, Negrobov, 1979).

These keys include representatives of the third group this genus which have following characters: femur yellow, postocellar bristles black (Stackelberg, 1934; Parent, 1938).

After the revision of the genus *Hercostomus* Loew of Palaearctic region Stackelberg (1934) there were described some new species. Y.S. Smirnov et O.P. Negrobov (1979) described from this group two new species from Japan (*Hercostomus flaviventris* Smirnov et Negrobov, *Hercostomus nemorum* Smirnov et Negrobov), D. Yang (1996a, 1996b, 1997), D. Yang and T. Saigusa (2001) – five species from China (*Hercostomus beijingensis* Yang, *Hercostomus gansuensis* Yang, *Hercostomus wudangshanensis* Yang, *Hercostomus xiaolongensis* Yang et Saigusa, *Hercostomus acutangulatus* Yang et Saigusa), A.A. Stackelberg (1949) – two species from Tajikistan (*Hercostomus paradoxopterus* Stack., *Hercostomus leptocercus* Stack.), M. Pollet (1990, 2004) – three species from Europe (*Hercostomus silvestris* Pollet, *Hercostomus blankaartensis* Pollet, *Hercostomus helveticus* Pollet), J. Olejníček (2002) – one species from Korea (*Hercostomus klowdeni* Olejníček).

The key of this group composed by A.A. Stackelberg contains 17 species of males and 17 species of females. One species (*Hercostomus chalybeus* Wied.) was transferred to new genera *Ethiromyia* Brooks (Brooks, 2005). The species *Hercostomus paradoxopterus* Stack. was not added in the key on female because it is not enough data in its description.

The key of females of the genus *Hercostomus* Loew includes representatives of the genus *Sybistroma* Meigen (*Sybistroma setosa* Schiner, *Sybistroma nodicornis* Mg.) and *Ludovicius* Rondani (*Ludovicius sinaiensis* Grichanov, *Ludovicius miricornis* Parent), which don't differ from females of the genus *Hercostomus* Loew.

This paper contains keys of 28 species of males and 26 species of females. Separately, 16 species are added in this key for the first time.

### Key of genus *Hercostomus* Loew. 3. part

#### **Males**

[1] 4-th joint of fore tarsi expanded .....	2
- Fore tarsi simple .....	4
[2] 3-d joint of fore tarsi not expanded.....	<i>H. sinicus</i> Stack.
- 3-d joint of fore tarsi expanded.....	3
[3] 1-st joint of fore tarsi expanded on the apex, triangular at the basement and in apical parts, black, in middle part light.....	<i>H. paradoxopterus</i> Stack.
- 1-st joint of fore tarsi simple, cylindrical.....	<i>H. chetifer</i> Walk.
[4] Palp with spike on the apex.....	5
- Palp on apex without spike.....	6
[5] Femur darkened from dorsal side.....	<i>H. (Gymnopternus) silvestris</i> Pollet
- Femur entirely yellow.....	<i>H. (Gymnopternus) blankaartensis</i> Pollet
[6] Femur partially darkened .....	7
- Femur entirely yellow .....	8
[7] Femur, fore tibia in most part black.....	<i>H. griseifrons</i> Beck.
- Femur, fore tibia in most part yellow .....	<i>H. rivulorum</i> Stack.
[8] Scutellum without hairs.....	9

- Scutellum covered by hairs ..... 15
- [9] Hypopygium yellow..... *H. flaviventris* Smirnov et Negrobov
- Hypopygium dark ..... 10
- [10] Cerci biramous, with long and thin lobes. Lateral lobe striate, brown, with long and strong black hairs on external margin, near the apex in light hairs; medial lobe narrow dark-yellow, without hairs, slightly helical banded..... *H. leptocercus* Stack.
- Cerci uniramouse ..... 11
- [11] Thorax and abdomen metallic-green..... 12
- Thorax partially yellow. Abdomen metallic-green, lateral sides of tergits I-II yellow ..... *H. acutangulatus* Yang et Saigusa
- [12] Hind coxae black..... *H. gansuensis* Yang
- Hind coxae yellow ..... 13
- [13] Postpedicel is very short, its length equal to its height at the basement, blunt..... 14
- Postpedicel is long, its length in 1,8 times longer then its height at the basement, sharp..... *H. beijingensis* Yang
- [14] Middle coxae yellow..... *H. xiaolongmensis* Yang et Saigusa
- Middle coxae dark..... *H. wudangshanus* Yang
- [15] Antennae partially yellow..... 16
- Antennae entirely black..... 18
- [16] Costa on the first section weakly but clearly thicken..... *H. zieheni* Parent
- Costa not thicken ..... 17
- [17] R<sub>4+5</sub> and M<sub>1+2</sub> converging to the apex ..... *H. ussurianus* Stack.
- R<sub>4+5</sub>, M<sub>1+2</sub> parallel at the apex..... *H. (Gymnopternus) congruens* Beck.
- [18] Costa on the first section thicken ..... 19
- Costa not thicken..... 22
- [19] Hind coxae light-yellow..... *H. (Gymnopternus) pseudoceler* Stack.
- Hind coxae dark in the most part..... 20
- [20] Costa thicken, that thickening takes about 2/3 of width of costal cell..... *H. (Gymnopternus) celer* Mg.
- Costa slightly thicken..... 21
- [21] Face white..... *H. (Gymnopternus) brevicornis* Staeg.
- Face brown..... *H. (Gymnopternus) klowdeni* Olejníček
- [22] Face violet-black..... *H. (Gymnopternus) aerosus* Fl.
- Face silvery-white or gray..... 23
- [23] Face gray..... 24
- Face silvery-white..... 25
- [24] Antennae black. Metanotum nitid. Section between R<sub>2+3</sub> and R<sub>4+5</sub> in 1.5 times longer then section between R<sub>4+5</sub> and M<sub>1+2</sub>. Apical section of M<sub>3+4</sub> approximately in 2 times longer then hind transverse vein ..... *H. daubichensis* Stack.
- Antenna dark-brown. Metanotum in white pollen. Section between R<sub>2+3</sub> and R<sub>4+5</sub> in 2 times longer then section between R<sub>4+5</sub> and M<sub>1+2</sub>. Apical section of M<sub>3+4</sub> approximately in 1.5 times longer then hind transverse vein..... *H. nemorum* Smirnov et Negrobov
- [25] Hind transverse vein lies a little to apex from the middle of the wing. Apical section of M<sub>1+2</sub> shorter then the main, apical section of M<sub>3+4</sub> shorter then the half of the main section of the same vein..... *H. (Gymnopternus) metallicus* Stann.
- Hind transverse vein lies closer to the basement from the middle of the wing. Apical section of M<sub>1+2</sub> longer then the main, apical section of M<sub>3+4</sub> longer then half of the main section of the same vein..... 26
- [26] Cerci ochre-yellow ..... *H. (Gymnopternus) blankaartensis* Pollet
- Cerci mainly dark..... 27
- [27] Fore coxae mainly dark ..... 28
- Fore coxae light-yellow..... 29
- [28] Fore, hind femur clearly obscured on the posterodorsal side, hind tibia entirely yellow ..... *H. (Gymnopternus) silvestris* Pollet
- All femur yellow, hind tibia slightly or strongly darkened on the apex..... *H. (Gymnopternus) assimilis* Staeg.

- [29] All tibia and femur light-yellow. Clypeus without hairs and little protuberant.....  
 ..... *H. (Gymnopternus) helveticus* Pollet  
 - Tibia and femur light-yellow except of middle femur, which from the ventral side with light-gray pollen. Clypeus not protuberant ..... *H. rohdendorfi* Stack.

## Females

- |   |   |
|---|---|
| [1] Scutellum without hairs .....   | 2   |
| - Scutellum covered with hairs .....  | 9   |
| [2] Femur partially darkened.....   | 3   |
| -Femur yellow.....  | 7   |
| [3] Palp and proboscis yellow.....  | <i>H. chetifer</i> Walk.                    |
| - Palp and proboscis dark (from brown to black).....  | 4   |
| [4] Femur yellow, middle, hind femur with black apex.....   | 5   |
| - Femur rusty-red or rusty-brown, hind femur on the apex black.....                               | <i>H. griseifrons</i> Beck.                 |
| [5] Middle tibia with long undulate apicoventral setae equal in length to basitarsus.....         | <i>Ludovicius sinaiensis</i> Grichanov      |
| - Middle tibia without long undulate apicoventral setae.....                                      | 6   |
| [6] Middle tibia with 4 anterodorsal bristles, 4 posterodorsal bristles.....                      | <i>H. rivulorum</i> Stack.                  |
| - Middle tibia with 3 anterodorsal bristle, 2 posterodorsal bristle, 1 anteroventral bristle..... | <i>H. rohdendorfi</i> Stack.                |
| [7] Coxae entirely yellow.....  | 8   |
| - Middle coxae with a narrow median stripe dark brown....   | <i>H. xiaolongmensis</i> Yang et Saigusa    |
| - Fore coxae dark.....  | <i>H. leptocercus</i> Stack.                |
| [8] Antennae entirely black.....  | <i>H. flaviventris</i> Smirnov et Negrobov  |
| - Antennae reddish-yellow. Postpedicel infuscate from above and at the apex .....                 | <i>Ludovicius miricornis</i> Parent         |
| [9] Antennae partially yellow.....  | 10  |
| - Antennae entirely black.....  | 12  |
| [10] Clypeus convex.....  | <i>Sybistroma nodicornis</i> Mg.            |
| - Clypeus normal.....   | 11  |
| [11] Antennae reddish.....  | <i>Sybistroma setosa</i> Schiner            |
| - Antennae mainly dark, scape from below yellow.....  | <i>H. ussurianus</i> Stack.                 |
| [12] Costa on the first section usually thicken .....   | 13  |
| - Costa not thicken .....   | 16  |
| [13] Epistoma without long hairs .....  | 14  |
| - Epistoma covered with long hairs .....  | 15  |
| [14] Frons and face in ample green-gray pollination.....  | <i>H. (Gymnopternus) klowdeni</i> Olejnicek |
| - Face light-gray, frons metallic-green, in ample brownish-gray pollination.....                  | <i>H. (Gymnopternus) pseudoceler</i> Stack. |
| [15] Epistoma covered with long light hairs.....  | <i>H. (Gymnopternus) celer</i> Mg.          |
| - Epistoma covered with long dark hairs.....  | <i>H. (Gymnopternus) brevicornis</i> Staeg. |
| [16] Clypeus with short hairs.....  | 17  |
| - Clypeus without hairs .....   | 18  |
| [17] Fore, hind femur clearly obscured on the posterodorsal side.....                             | <i>H. (Gymnopternus) aerosus</i> Fl.        |
| - All femur yellow.....   | <i>H. (Gymnopternus) metallicus</i> Stann.  |
| [18] Femur partially obscured .....   | 19  |
| - All femur yellow .....  | 21  |
| [19] Fore, hind femur clearly obscured on the posterodorsal side .....                            | <i>H. (Gymnopternus) silvestris</i> Pollet  |
| - Middle femur obscured on the apex.....  | 20  |
| [20] Hind femur yellow.....   | <i>H. rohdendorfi</i> Stack.                |
| - Hind femur obscured on the apex .....   | <i>H. nanus</i> Macq.                       |
| [21] Hind tibia clearly obscured on the apex.....   | <i>H. (Gymnopternus) assimilis</i> Staeger  |

- Hind tibia yellow.....	22
[22] Hind tarsus entirely yellow .....	<i>H. (Gymnopternus) blankaartensis</i> Pollet
- Hind tarsus dark.....	23
[23] Clypeus flat.....	24
- Clypeus protuberant .....	<i>H. (Gymnopternus) helveticus</i> Pollet et Rampazzi
[24] Metanotum in gray pollen nearly dull.....	<i>H. wudangshanus</i> Yang
- Metanotum metallic-green, brilliant.....	<i>H. daubichensis</i> Stack.

## References:

- Aldrich J.M.** 1896. Dolichopodidae. in Williston S.W. (ed.). On the diptera of St Vincent (West Indies). *Trans. Ent. Soc. Lond.* 1896: 309-345.
- Becker T.** 1917. Dipterologische Studien. Dolichopodidae. A Paläarktische Region. *New Acta Academiae Caesareae Leopoldinisch-Caroline Germanicae Naturae Curiosorum.*, 102:115-361.
- Brooks S.** 2005. Systematics and phylogeny of Dolichopodinae (Diptera: Dolichopodidae). *Zootaxa* 857:1-158.
- Corpus L.D.** 1989. A revision and proposed phylogeny of the Néartic *Hercostomus* (Diptera, Dolichopodidae). *Entomography*, 6: 213-260.
- Curran C.H.** 1933. Some north American Diptera. *Am. Mus. Novit.* 682: 1-11.
- D'Assis Fonseca E.C.M.** 1978. Diptera Orthorrhapha Brachycera Dolichopodidae. *Handbooks for the Identification of British Insects*, 9 (5). 90 p.
- Foote R.H., Coulson J.R. & H. Robinson.** 1965. Family Dolichopodidae. In Stone A. and all: *A catalog of the Diptera of America North of Mexico*. USDA Handbk. 276: 482-530.
- Grichanov I.Ya.** 2006. A checklist and keys to North European genera and species of Dolichopodidae (Diptera). St. Petersburg: VISR RAAS., 120 p. (Plant Protection News, Supplement).
- Grichanov I.Ya.** 2007. A checklist and keys of the Caucasus and East Mediterranean genera and species of Dolichopodidae (Diptera). St. Petersburg: VISR RAAS., 160 p. (Plant Protection News, Supplement).
- Negrobov O.P. & A. A. Stackelberg.** 1969. Faune des Dolichopodidae. In *Opredeliteli nasekomych evropeiskoi ciasti SSSR*. Zool. Inst. A.N.S.S.R. 5(1): 670-751.
- Negrobov O.P.** 1979. Dolichopodidae. In E. Lindner: *Die Fliegen der Palaearktischen Region*. Lief. V.29, Lf. 321:419-474.
- Negrobov O.P.** 1979. Dolichopodidae. In E. Lindner: *Die Fliegen der Palaearktischen Region*. Lief. V. 29, Lf. 322. S.475-530.
- Negrobov O.P. & N. A. Nechay.** 2009a. Novihj vid roda *Hercostomus* Loew, 1857 (Diptera, Dolichopodidae) s opredelitelnoj tablicej palearkticheskikh vidov gruppah IV. *Byulletenj MOIP*, Ser. Biol. T.114, 5: 84-87. (in Russian)
- Negrobov O.P. & N. A. Nechay.** 2009b. Key to the Palearctic species of the genus *Hercostomus* Loew (Diptera, Dolichopodidae). Part 5. *Int. J.Dipterol.Res.*, 20 (4): 201-206.
- Negrobov O.P., Nechay N.A. & O.O.Maslova.** 2008. Key to the Palaearctic species of the genus *Hercostomus* Loew (Diptera, Dolichopodidae). Part 1. *Int. J.Dipterol.Res.* 19 (4): 187-191.
- Negrobov O.P. & E. S. Smirnov.** 1979. Novye vidy roda *Hercostomus* Lw. (Diptera, Dolichopodidae) iz Yaponii. *Vestn. Mosk. un-ta. Ser. Biologiya.* 16(3):38-42.
- Olejníček J.** 2002. New records of Dolichopodidae (Diptera) species of Korea, including the description of a new species. *Biologia*, 57 (5): 567-571.
- Parent O.** 1938. Faune de France, 35, Dipteres Dolichopodidae. 720 pp. Paris.
- Pollet M.** 1990. Two *Hercostomus (Gymnopternus)* species, new to Great Britain. *Dipterists Digest*, 7: 30-33.
- Pollet M.** 1990. Phenetic and ecological relationships between species of the subgenus *Hercostomus (Gymnopternus)* in western Europa with the description of two new species (Diptera, Dolichopodidae). *Syst. Ent.*, 15 (3): 359-382.
- Pollet M.** 2004. A critical note on the systematic position of *Gymnopternus* (Diptera: Dolichopodidae). *Studia Dipterologica*. 10 (2): 537-548.

- Pollet M. & F. Rampazzi.** 2003. *Gymnopternus helveticus*, a new dolichopodid species from Switzerland (Diptera, Dolichopodidae). *Studia Dipterologica*, 10 (2): 549-557.
- Robinson H.** 1970. The subfamilies of the family Dolichopodidae in North and South America (Diptera). *Papeis Dep. Zool. S. Paulo*. 23 (6): 53-62.
- Stackelberg A.A.** 1930. Dolichopodidae. In E. Lindner: *Die Fliegen der Palearktischen Region*. Lief. 51: 1-64.
- Stackelberg A.A.** 1934. Dolichopodidae. In E. Lindner: *Die Fliegen der Palearktischen Region*. Lief. 82: 129-176.
- Stackelberg A.A.** 1949. Vidy roda *Hercostomus* Lw. (Diptera, Dolichopodidae) Sredneasiatskoj fauni. *Tr. Zool. Inst. AN SSSR.*, 8: 669-687.
- Yang D.** 1996. New species of *Hercostomus* and *Ludovicus* from North China (Diptera: Dolichopodidae). *Dtsch. ent. Z.*, 43(2): 235-244.
- Yang D.** 1996. New species of Dolichopodinae from China (Diptera, Dolichopodidae). *Entomofauna*, 17 (18): 317-324.
- Yang D.** 1997. New species of *Amblypsilopus* and *Hercostomus* from China (Diptera, Dolichopodidae). *Bull. Inst. R. Sci.Nat.Belg. Ent.*, 67: 131-140.
- Yang D. & T.Saigusa.** 2001. New and little known species of Dolichopodidae from China (XI). *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique Entomologie.*, 71: 237-256.
- Yang D., Zhu Y.J., Wang M.Q. & L.L.Zhang.** 2006. World Catalog of Dolichopodidae (Insecta: Diptera). China Agricultural University Press. 704 pp. Beijing.

**Contents:** O.O. Selivanova, O.P. Negrobov, N.A. Nechay, O.O. Maslova, Key to the Palaearctic species of the genus *Hercostomus* Loew (*Diptera, Dolichopodidae*) 3. Part p. 1 - Editorial, p.7.

## Centre for Entomological Studies Ankara



(A scientific Consortium)  
 (co-operation of research workers for pure-scientific, not commercial purpose)

Web Page of the Cesa: <http://www.cesa-tr.org/>

**Scientific Serials:** Priamus & Supplement (ISSN 1015-8243)<sup>3</sup>, Miscellaneous Papers (ISSN 1015-8235)<sup>4</sup>, Memoirs (ISSN-8227)<sup>5</sup> DVD Films<sup>6</sup>, Iconographia Insectorum<sup>7</sup> Cesa Publications on African Lepidoptera (series)<sup>8</sup>, Cesa News [online]<sup>9</sup>, Cesa Books<sup>10</sup>

**Owners / Sahipleri - Editors / Yayıncılar:** Prof. Dr. Ahmet Ömer Koçak (c/o Yüzüncü Yıl University, Turkey) - Editor Assistant: Asst. Prof. Dr. Muhabbet Kemal Koçak (c/o Yüzüncü Yıl University, Turkey).

**Editorial Board of all Scientific Serials / Bütün Bilimsel Yayınların Yayın Kurulu:** Insecta, taxonomy, nomenclature, ecology, faunistics: Prof. Dr. Ahmet Ömer Koçak (Yüzüncü Yıl Üniversitesi, Turkey), Asst. Prof. Dr. Muhabbet Kemal Koçak (Yüzüncü Yıl University, Turkey), Assoc. Prof. Dr. Selma Seven (Gazi University, Turkey); Homoptera: Dr. Emine Demir (Turkey). Orthoptera: Dr. Piotr Naskrecki (Connecticut University, U.S.A.), Asst. Prof. Dr. Mustafa Ünal (Abant İzzet Baysal University, Turkey), Asst. Prof. Dr. Yusuf Hüseyinoğlu (Mersin University, Turkey), Asst. Prof. Dr. Yaşar Gülmез (Gazi Osman Paşa University, Tokat). Coleoptera / Chrysomelidae: Assoc. Prof. M.S.Mohammedsaid (Malaysia). - Plant taxonomy, flora and vegetation: Asst. Prof. Dr. Fevzi Özgökçe, Asst. Prof. Dr. Mural Ünal (Yüzüncü Yıl University, Van, Turkey).

ALL RIGHTS RESERVED

Correspondences should be addressed to: Prof. Dr. Ahmet Ömer Koçak, c/o Yüzüncü Yıl University, Fen Fakültesi, Biyoloji Bölümü, Kampus, Van / Turkey. - e-mail: [cesa\\_tr@yahoo.com.tr](mailto:cesa_tr@yahoo.com.tr)

All serials are recorded regularly by the Zoological Record,  
 Thomson Reuters, Enterprise House, Innovation Way, Heslington, York, YO10 5NQ, United Kingdom  
[ts-emea-york.dcsadmins@thomson.com](mailto:ts-emea-york.dcsadmins@thomson.com)

<sup>3</sup> <http://www.cesa-tr.org/Pri.htm> - pdf available after corresponding

<sup>4</sup> <http://www.cesa-tr.org/Miscell.htm> - pdf available after corresponding

<sup>5</sup> <http://www.cesa-tr.org/Memoirs.htm> -

<sup>6</sup> <http://www.cesa-tr.org/CDF.htm>

<sup>7</sup> <http://www.cesa-tr.org/Icon.htm>

<sup>8</sup> [http://www.metafro.be/Members/Cesa/internet\\_sayfas305/base\\_view](http://www.metafro.be/Members/Cesa/internet_sayfas305/base_view) - pdf available

<sup>9</sup> <http://www.cesa-tr.org/Cesanews.htm>

<sup>10</sup> <http://www.cesa-tr.org/Cesabooks.htm>